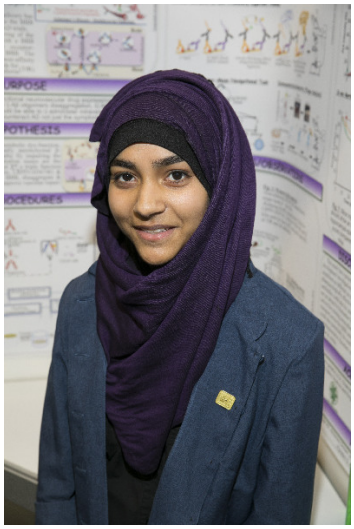
# CWSF 2017 - Regina, Saskatchewan



## Amal Aziz

### Developing a Trojan Horse to Treat Alzheimer's Disease

**Challenge:** Innovation
**Category:** Intermediate
**Region:** Thames Valley
**City:** London, ON
**School:** Sir Wilfrid Laurier S.S.

**Abstract:** A novel class of triple functioning neurovascular medicine could be re-engineered by fusing it with monoclonal antibodies (mAb) to the transferrin receptor (TR) on the BBB. The TRmAb can act as a molecular Trojan horse to ship the fused drugs through the BBB via a receptor-mediated transport system, owing principally to the significantly improved CNS drug transport, to improve the AD phenotype.

## Biography

Amal is enrolled in the enrichment program at Sir Wilfrid Laurier S.S. Amal enjoys reading, graphic designing, playing floor hockey and piano. Amal has won a few honors/awards in the Gauss Contest (twice), the Canada`s Royal Legion Speech Contest, the Thames Valley Science and Engineering Fair (multiple), and the Sanofi Merit award. Her observation about the fact that almost 99.6% of clinical trials from 2002 to 2012 aimed at reversing or preventing Alzheimer's Disease failed, mostly owing to blood-brain barrier (BBB) penetration issues, and the fact that some antibodies and shuttle peptides exist that can be manipulated as a BBB molecular "Trojan Horse" to ferry a neurovascular medicine across the BBB using receptor mediated transport system paved the way to coin the original idea of her project.

| Awards | Value |
|---|---|
| Youth Can Innovate Awards - Intermediate<br>Sponsor: The Gwyn Morgan and Patricia Trottier Foundation | $750 |
| Challenge Award - Innovation - Intermediate<br>Sponsor: Youth Science Canada | |
| Excellence Award - Intermediate - Gold Medal<br>Sponsor: Youth Science Canada | $250 |
| Western University Scholarship<br>Gold Medallist - $4000 Entrance Scholarship<br>Sponsor: Western University | $4 000 |
| Total | $5 000 |